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TRANSMITTAL OF APPEAL BRIEF (Large Entity)	Docket No. POU920000010US1

In Re Application Of: **Novaes et al.**

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
09/584,638	05/31/2000	Michael Young Won	46369	2155	4280

Invention: **METHOD, SYSTEM AND PROGRAM PRODUCTS FOR ODERING LISTS OF SERVICE ADDRESSES TO PROVIDE LOAD BALANCING OF A CLUSTERED ENVIRONMENT**

COMMISSIONER FOR PATENTS:

Transmitted herewith ~~is~~ is the Appeal Brief in this application, with respect to the Notice of Appeal filed on **February 11, 2005**

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Dated: **April 06, 2005**

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Appellants:	Novaes et al.	:	Group Art Unit: 2155
Serial No.:	09/584,638	:	Examiner: Michael Young Won
Filed:	05/31/00	:	Appeal No.:

Title: METHOD, SYSTEM AND PROGRAM PRODUCTS FOR ORDERING LISTS OF SERVICE ADDRESSES TO PROVIDE LOAD BALANCING OF A CLUSTERED ENVIRONMENT

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Date of Signature: April 06, 2005

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Brief of Appellants

Dear Sir:

This is an appeal from a final rejection, dated November 23, 2004, rejecting claims 1, 4-7, 12-21, 23-29, 34-43, 45-55, 60-69, 71 & 72. Claims 8-11, 22, 30-33, 44, 56-59 & 70 have been allowed. This Brief is accompanied by a transmittal letter authorizing the charging of Appellants' deposit account for payment of the requisite fee set forth in 37 C.F.R. §1.17(c).

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Appellants' Brief is being filed after the effective date of the final BPAI Rules, September 13, 2004, and, therefore, the format and content of Appellants' Brief is in compliance with the requirements set forth in 37 C.F.R. §41.37(c). If Appellants' Brief does not comply with the requirements set forth in 37 C.F.R. §41.37(c), Appellants request notification of the reason for noncompliance and the opportunity to file an amended Brief pursuant to 37 C.F.R. §41.37(d).

Real Party in Interest

This application is assigned to **International Business Machines Corporation** by virtue of an assignment executed by the co-inventors on September 7, 2000, September 11, 2000, September 19, 2000, September 26, 2000, and recorded with the United States Patent and Trademark Office at reel 011200, frame 0764, on October 3, 2000. Therefore, the real party in interest is **International Business Machines Corporation**.

Related Appeals and Interferences

To the knowledge of the Appellants, Appellants' undersigned legal representative, and the assignee, there are no other appeals or interferences, which will directly affect or be directly affected by or have a bearing on the Board's decision in the instant appeal.

Status of Claims

This patent application was filed on May 31, 2000, with the U.S. Patent and Trademark Office. As filed, the application included three (3) claims, each of which was independent (i.e., claims 1, 2 & 3).

By a Preliminary Amendment mailed April 12, 2002, Appellants canceled claims 2 & 3, and added new claims 4-72, resulting in eight (8) independent claims pending (i.e., claims 1, 18, 25, 40, 47, 48, 51 & 66).

In an initial Office Action dated September 8, 2003, claims 1, 4-7, 12-19, 21, 23-29, 34-43, 45-55, 60-69 & 71-72 were rejected under 35 U.S.C. §102(e) as being anticipated by Christensen et al. (U.S. Patent No. 6,330,605 B1; hereinafter Christensen), and claims 20, 42 & 68 were rejected under 35 U.S.C. §103(a) as being unpatentable over Christensen. Claims 8-11, 22, 30-33, 44, 56-59 & 70 were objected to as being dependent on a rejected base claim, but were considered allowable if rewritten into independent form including all the limitations of the base claim and any intervening claims. In Appellants' Response dated December 8, 2003, claims 1, 4-6, 8, 18, 21-28, 30, 40, 43-44, 47, 48, 51-54, 56, 66 & 69-70 were amended, resulting in an additional six (6) independent claims (i.e., claims 8, 22, 30, 44, 56 & 70).

In a second and final Office Action dated February 17, 2004, claims 8-11, 22, 30-33, 44, 56-59 & 70 were allowed. Claims 1, 4-7, 12-19, 21, 23-29, 34-43, 45-55, 60-69 & 71-72 were rejected under 35 U.S.C. §102(e) as being anticipated by Christensen, and claims 20, 42 & 68 were rejected under 35 U.S.C. §103(a) as being unpatentable over Christensen. In Appellants' Response dated April 16, 2004, no claims were amended.

In an Office Action dated May 13, 2004, which withdrew the finality of the February 17, 2004 Office Action, claims 1, 4-7, 12-21, 23-29, 34-43, 45-55, 60-69 & 71-72 were rejected under 35 U.S.C. §103(a) as being unpatentable over Christensen in view of Freund (U.S. Patent No. 5,987,611 A; hereinafter Freund). In Appellants' Response dated August 11, 2004, no claims were amended.

In the final Office Action dated November 23, 2004, the drawings were objected to under 37 C.F.R. §1.83(a); claims 1, 18, 25, 40, 47, 48, 51 & 66 were rejected under 35 U.S.C. §112, first paragraph; and claims 1, 4-7, 12-21, 23-29, 34-43, 45-55, 60-69 & 71-72 were rejected under 35 U.S.C. §103(a) as being unpatentable over Christensen in view of Freund. Claims 8-11, 22, 30-33, 44, 56-59 & 70 remained allowed. In Appellants' Response dated January 3, 2005, no claims were amended.

An Advisory Action issued January 26, 2005 responsive to Appellants' January 3, 2005 Request for Reconsideration of the final Office Action. The Advisory Action indicated that the drawings objection under 37 C.F.R. §1.83(a) and the claims rejection under 35 U.S.C. §112, first

paragraph, were withdrawn. The Advisory Action further indicated that Appellants' Request did not place the application in condition for allowance.

A Notice of Appeal to the Board of Patent Appeals and Interferences was mailed on February 11, 2005. The Notice of Appeal was received at the U.S. Patent and Trademark on February 14, 2005. The status of the claims is therefore as follows:

Claims allowed – 8-11, 22, 30-33, 44, 56-59 & 70;

Claims objected to – none;

Claims rejected – 1, 4-7, 12-21, 23-29, 34-43, 45-55, 60-69, 71 & 72; and

Claims canceled – 2 & 3.

Appellants are appealing the rejection of claims 1, 4-7, 12-21, 23-29, 34-43, 45-55, 60-69, 71 & 72.

Status of Amendments

Appellants proffered no amendments responsive to the final Office Action dated November 23, 2004. The claims as set out in the Appendix include all prior entered claim amendments.

Summary of Claimed Subject Matter

In one aspect of the invention, Appellants claim a method (independent claim 1), system (independent claims 25 & 47) and program storage device (independent claim 51) for providing ordered lists of service addresses wherein the method, for instance, includes: creating an ordered list of service addresses 2212 (FIG. 22)to be used by a client node of a computing environment to reach a service of the computing environment, the creating using a predefined equation to order a plurality of service addresses having the same ordering criterion, the predefined equation balancing use of the plurality of service addresses among the client node and at least one other client node of the computing environment (see FIG. 24); and using the ordered list by the client node to reach the service, wherein the ordered list is ordered specifically for the client node

based on one or more characteristics of the client node (see, e.g., FIGS. 22 & 24, as well as page 58, line 26 – page 66, line 19 of the specification).

In a related aspect, Appellants claim a method (independent claim 18), system (independent claims 40 & 48) and program storage device (independent claim 66) for providing ordered lists of service addresses, wherein the method includes, for instance: ordering a list of a plurality of service addresses according to an ordering criterion 2212 (FIG. 22), the ordered list being ordered for a specific client node based on one or more characteristics of the client node (see FIG. 24); and for at least one set of service addresses of the plurality of service addresses having a same value for the ordering criterion, selecting an order for the service addresses of the set, the selecting being based at least in part on workload distribution (see, e.g., page 58, line 26 – page 66, line 19).

Appellants further claim that the ordering criterion includes distance from the client node to a plurality of servers corresponding to the plurality of service addresses (e.g., claims 4, 26 & 52), and that the creating includes ordering the service addresses based on distance from the client node to servers of the service addresses (e.g., see claims 6, 28, 45, 54 & 71). Appellants further characterize the ordering (e.g., claims 7, 29, 46, 55 & 72) as being based on a lowest distance (see, e.g., 2402 of FIG. 24, as well as page 61, line 15 – page 63, line 9).

In another aspect, Appellants further characterize certain recited independent claims by reciting that the predefined equation is based at least in part on the number of the plurality of service addresses having the same ordering criterion and a node number of the client node (e.g., claims 5, 27 & 53) (see, e.g., FIG. 24, as well as page 63, line 10 – page 64, line 21).

Grounds of Rejection to Be Reviewed On Appeal

1. Whether claims 1, 4-7, 12-21, 23-29, 34-43, 45-55, 60-69, 71 & 72 were rendered obvious under 35 U.S.C. §103(a) to one of ordinary skill in the art by Christensen in view of Freund, and therefore, properly rejected under 35 U.S.C. §103(a).

Argument

I. *Rejection under 35 U.S.C 103(a) over U.S. Patent No. 6,330,605 B1 (to Christensen) in view of U.S. Patent No. 5,987,611 (to Freund)*

A. Claims 1, 12-21, 23-25, 34-43, 47-51 & 60-69:

Reversal of the rejection to claims 1, 12-21, 23-25, 34-43, 47-51 & 60-69 as obvious over Christensen in view of Freund is respectfully requested.

Appellants request reconsideration and withdrawal of the obviousness rejection on the following grounds: (1) the final Office Action has misinterpreted the teachings of the Christensen and Freund patents, thus voiding the basis for the rejection; (2) the combination of documents fails to disclose Appellants' claimed invention; (3) the documents themselves lack any teaching, suggestion or incentive for their further modification as necessary to achieve Appellants' recited invention; and (4) the combination, to the extent characterized in the Office Action, is a hindsight reconstruction of the claimed invention using Appellants' own disclosed subject matter.

Appellants' invention is directed, in one aspect, to providing ordered lists of service addresses to client nodes to enable those client nodes to access a service associated with those service addresses. Each ordered list is specifically ordered for a particular client node based on one or more characteristics of that client node. Thus, different client nodes are given differing ordered lists to diversify how the client nodes access the particular service. This provides load balancing among various client nodes.

As one example, Appellants claim a method of providing ordered lists of service addresses (see claim 1). This method includes: creating an ordered list of service addresses to be used by a client node of a computing environment to reach a service of the computing environment, the creating using a predefined equation to order a plurality of service addresses having the same ordering criterion, the predefined equation balancing use of the plurality of service addresses among the client node and at least one other client node of the computing environment; and using the ordered list by the client node to reach the service, wherein the ordered list is ordered specifically for the client node based on one or more characteristics of the

client node. Thus, in Appellants' claimed invention, an ordered list of service addresses is created for use by a client node and that ordered list is created in such a way as to balance the use of service addresses among different client nodes. The ordered list of service addresses is created for a particular client node and is specifically ordered for that client node based on one or more characteristics of the client node. Appellants respectfully submit that this functionality is not taught or suggested by Christensen and Freund, either alone or in combination.

Christensen describes a proxy cache cluster (PCC) which couples to a service provider of a communications network to increase the availability of services offered by the provider to clients connected to the network. The clients access the services by issuing requests to network addresses associated with these services. The PCC increases the availability of the services by receiving and servicing those requests on behalf of the service provider in accordance with a proxy cache clustering technique. (See Abstract.)

In Christensen, a plurality of processor/memory mechanisms (PMMs) are adapted to cooperatively interact in order to receive and service requests on behalf of the service provider. The method includes balancing the service addresses among PMMs by assigning selected service addresses to each PMM of the PCC (see claim 1 of Christensen). In claim 21, Christensen further recites that the balancing includes summing the load ratings of the hosted PCC services; calculating the load rating per address for each hosted PCC service; creating an address list that is sorted, in descending order, by the calculated load rating per address; summing the capacity ratings of the PMMs; and calculating a current capacity rating of each PMM normalized to a common load unit metric. Thus, in Christensen, there is a balancing of servicing of requests between the plurality of processor/memory mechanisms, which includes organizing the PMMs as one or more proxy cache clusters (PPCs) and then balancing the service addresses among the PMMs by assigning selected service addresses to each PMM of the PCC. This balancing includes creating an address list that is sorted by the calculated load rating per address for each hosted PCC service.

Initially, Appellants respectfully traverse the characterizations of the teachings of Christensen stated in the final Office Action.

To the extent relevant, Christensen describes a method of increasing availability of services offered by a service provider to clients connected to a communications network which includes balancing among a plurality of processor/memory mechanisms the processing of requests on behalf of the service provider. This balancing includes organizing the PMM as one or more proxy cache clusters and then balancing the service addresses among the PMMs by assigning selected services addresses to each PMM of the PCC. During this balancing, an address list is created based on the addresses for each hosted PCC service. Thus, Appellants respectfully submit that Christensen is not even teaching Appellants' recited functionality of creating an ordered list of service addresses to be used by a client node of a computing environment to reach a service of a computing environment. The list in Christensen referenced at column 24, lines 14-15 (i.e., claim 21) is used at the service end of the network for balancing the load by the service provider.

Additionally, the Advisory Action dated January 26, 2005, appears to assert at paragraph 5 that Appellants' recited functionality at issue would be implicit in Christensen. This assertion is respectfully traversed. The doctrine of inherency is well-settled in patent law. In relying on the theory of inherency, an Examiner must provide a basis in fact and/or technical reasoning to reasonably support a determination that the allegedly inherent characteristic *necessarily* flows from the teachings of the applied prior art. As noted above, the list in Christensen referenced at column 24, lines 14-15 (and cited in the Advisory Action in support of the implicit rejection) is used at the service end of the network, and not at a client node, as recited by Appellants. Thus, Appellants respectfully submit that the final Office Action (as well as the Advisory Action) fail to set forth a technical reasoning to support an inherency rejection of their cited functional language. Absent such a showing, it is well established that claims are to be read in their entirety, including any functional limitations presented therein.

Further, and without acquiescing to the further characterizations of Christensen stated at page 4 of the final Office Action, Appellants note that the final Office Action acknowledges that Christensen does not teach Appellants' recited characterization that the ordered lists of service addresses is ordered specifically for the client node based on one or more characteristics of that client node. Appellants agree. However, the final Office Action next alleges that Freund

overcomes this deficiency of Christensen when applied against the independent claims presented. This conclusion is respectfully traversed. At page 5, lines 5-10, the final Office Action alleges:

> Freund teaches wherein a list is ordered specifically for said client node based on one or more characteristics of said client node. (See Abstract: "Access rules can be defined by ... a list of URLs (or WAN addresses) that a user application can (or cannot) use" and "the system can determine if a particular process in question should have access to the Internet and what kind of access ... Internet address ... is permissible for the given specific user").

Appellants respectfully submit that the cited lines from the abstract of Freund simply do not teach or suggest the recited functionality at issue in their independent claims.

Freund does not teach or suggest creating an ordered list of service addresses for a particular client node in which the list is created for that node based on one or more characteristics of that node. Instead, Freund proposes creating access rules for a particular application running on a node. Thus, to the extend that Freund discusses a list, the list is based on user or application characteristics, as opposed to any client node characteristics such as recited in the functionality of Appellants' invention.

To further explain, Freund describes a system for managing internet access on a per application or per user basis. That is, the rules of Freund are created to govern what a particular user is allowed to access. This is explicitly and repeatedly stated in Freund. For example, in the Abstract, it is stated:

> Access rules which can be defined can specify criteria such as total time a **user** can be connected to the Internet ..., time a **user** can interactively use the Internet ..., a list of applications or application versions that a **user** can or cannot use in order to access the Internet, a list of URLs (or WAN addresses) that a **user application** can (or cannot) access, a list of protocols or protocol components ... that a **user application** can or cannot use, and rules to determine what events should be logged ... (emphasis added).

Freund goes on further to state: "With this information, the system can determine if a particular process in question should have access to the Internet and what kind of access ... is permissible for the given specific user." Thus, Freund specifically describes managing Internet access on a per application or per user basis. As is understood in the art, a node may be running

multiple applications at a given time. Thus, there is not a one-to-one correlation between a per application analysis and a per node characterization such as recited by Appellants. Each access rule in Freund is based on what a particular user is allowed to do, and is not based on the characteristics of the node running the application. For instance, the geographic location of the node running the application is not taken into consideration in creating the access list in Freund. Instead, the rules are based on the identity of the user.

Still further, Appellants respectfully submit that the mention of a list of URLs or addresses is not a teaching of their recited concept of creating a list of service addresses for a client node based on characteristics of that node. Freund merely teaches that access to the Internet may be controlled for individual users. The list of URL addresses that are included in the address rules are just those addresses that a particular user is allowed to access. Thus, those lists are specific to a particular user.

For the above reasons, Appellants respectfully submit that the final Office Action has mischaracterized the teachings of Freund in alleging that Freund teaches a list ordered specifically for a client node based on one or more characteristics of the client node. No ordering of a list is described by Freund, and to the extent that lists are described, Freund teaches that the lists are specific to a user application, and not to a client node *per se*. For at least these reasons, Appellants respectfully request reconsideration and withdrawal of the obviousness rejection to their independent claims based upon the teachings of Christensen and Freund.

Further, Appellants traverse the combinability of Christensen and Freund to the extent that the final Office Action alleges that the combination teaches Appellants' recited invention, and in particular, Appellants' characterization that the ordered lists of service addresses is ordered specifically for the client node based on one or more characteristics of the client node.

Without acquiescing to the rationale for combining the documents, Appellants note that if Freund is combined with Christensen as proposed, their recited invention still would not have been taught or suggested by the combination.

Freund does not discuss ordering of a list of service addresses *per se*, let alone the ordering of service addresses for a client node based on one or more characteristics of the client

node. The list of URLs in Freund do not present or teach one skilled in the art an ordering mechanism, and the access rules of Freund do not result in any ordering of the list of URLs. Still further, there is no discussion or suggestion in Freund that the listed URLs is in any way dependent on a client node characteristic itself, rather than an identity of an application or user running on the node. Additionally, as noted above, Christensen is not even teaching Appellants' recited functionality of creating an ordered list of service addresses to be used by a client node of a computing environment to reach a service of a computing environment. The list in Christensen is used at the service end of the network for balancing the load by the service provider, and does not meet the functionality recited by Appellants in the independent claims presented.

Thus, Appellants respectfully submit that the combination of Christensen and Freund would not teach one skilled in the art their functionality of creating an ordered list of services addresses to be used by a client node of a computing environment to reach a service node of the computing environment, wherein the ordered list of services is specifically ordered for the client node based on one or more characteristics of the client node.

Still further, upon a review of the applied patents, there is no teaching, suggestion or incentive for further modification of the combination as would be necessary to achieve Appellants' invention. The lists of addresses in Christensen do not comprise an ordered list of service addresses to be used by a client node to reach a service of a computing environment, and the URLs and access rules of Freund do not apply nor do they suggest the creation of such an ordered list of services which is based on one or more characteristics of the client node.

Yet further, the characterizations of the teachings of Freund provided in the final Office Action provide no technical basis outside that contained in Appellants' own specification. The characterizations of the teachings of Freund in particular merely assert the language of Appellants' claimed invention in hindsight. Thus, the rejection violates the well known principle that Appellants' own disclosure cannot be used as a reference against them.

The consistent criterion for the determination of obviousness is whether the art would have suggested to one of ordinary skill in the art that the claimed invention should be carried out and would have a reasonable likelihood of success, viewed in light of the prior art. The suggestion and the expectation of success must be found in the prior art, not in the Appellants'

disclosure. The alleged combination at issue simply is characterized in the language of Appellants' own disclosure, rather than an identified basis in the prior art for achieving the modifications necessary to arrive at Appellants' claimed invention, in violation of this well known principle. This is yet another, independent reason why the current invention is not obvious over the applied art.

In summary, Appellants traverse the rejection of the independent claims based on the misinterpretation of the Christensen and Freund patents; the lack of a teaching or a suggestion of their invention in the combination; the lack of an actual teaching, suggestion or incentive in the art for the modifications necessary to achieve their invention; and the use of Appellants' own disclosure and results as a basis for the alleged modifications.

There is no discussion or suggestion in Christensen or Freund of an ordered list of service addresses to be used by a client node, wherein the ordered list of service addresses is ordered specifically for the client node based on one or more characteristics of the client node.

For the above reasons, Appellants respectfully request reversal of the obviousness rejection to claims 1, 12-21, 23-25, 34-43, 47-51 & 60-69.

B. Claims 4, 6, 7, 26, 28, 29, 45, 46, 52, 54, 55, 71 & 72:

Appellants further recite in these claims that the ordering criterion includes distance from the client node to a plurality of servers corresponding to the plurality of service addresses. Since it is admitted in the Office Action that Christensen fails to teach or suggest creating an ordered list of services wherein the ordered list is ordered specifically for the client node based on one or more characteristics of the client node, it follows that Christensen also fails to teach or suggest that the ordering criterion comprises distance from a client node to a plurality of servers.

Support for the rejection of these claims is indicated in the Office Action at column 6, lines 13-15, column 5, lines 44-48, column 11, lines 38-40, and column 3, lines 8-11 of Christensen. (See page 9, line 20 – page 10, line 4, as well as page 13, lines 6-10 of the final Office Action.) However, Appellants respectfully submit that these cited lines of Christensen relate to a load rating which is a measure of the PCC service resource source consumption, such

as the amount of traffic at the website 180. There is no teaching or suggestion in the cited lines of Christensen that a characteristic of the client node upon which an ordered list of services is created is distance from the client node to a plurality of servers. The load rating in Christensen simply refers to the processing load at the service end.

For the above reasons, Appellants respectfully request reversal of the obviousness rejection to dependent claims 4, 6, 7, 26, 28, 29, 45, 46, 52, 54, 55, 71 & 72.

C. Claims 5, 27 & 53:

Reversal of the rejection to claims 5, 27 & 53 as obvious over Christensen in view of Freund is respectfully requested.

These claims are believed allowable for the same reasons noted above in connection with their respective independent claims, as well as for their own additional characterizations. These claims further recite functionality wherein the predefined equation referenced in the independent claims is based at least in part on the number of the plurality of service addresses having the same ordering criterion and a node number of the client node. No similar characterization is believed taught or suggested by the applied art.

The final Office Action cites column 7, lines 1-20 of Christensen for allegedly teaching this functionality. The cited lines of Christensen discuss a capacity rating for a PMM, which includes the size of its network connection, the amount of memory and the speed of its processor. Different PMM capacity ratings are discussed. The relative resource characteristics of the PMMs are taken into account by Christensen's clustering technique to produce, *inter alia*, the capacity rating. The final Office Action provides no analysis as to how this determination of a capacity rating for a PMM relates to Appellants' recited predefined equation being based at least in part on the number of the plurality of service addresses having the same ordering criterion and a node number of the client node. Absent such a discussion, Appellants respectfully submit that the final Office Action mischaracterizes the teachings of Christensen as somehow being applicable to Appellants' recited equation.

For these reasons, Appellants respectfully request reversal of the obviousness rejection to dependent claims 5, 27 & 53.

Conclusion

Appellants respectfully request reversal of the 35 U.S.C. §103(a) rejection to claims 1, 4-7, 12-21, 23-29, 34-43, 45-55, 60-69, 71 & 72. Appellants submit that Christensen and Freund would not have rendered their claimed invention obvious to one of ordinary skill in the art. For example, these patents do not, individually or in combination, teach or suggest at least Appellants' recited independent claims, which include: creating an ordered list of service addresses to be used by a client node, wherein the ordered list of service addresses is ordered specifically for the client node based on one or more characteristics of the client node.

Accordingly, reversal of the rejection is respectfully requested.

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Dated: April 06, 2005

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Appendix

1. A method of providing ordered lists of service addresses, said method comprising:

creating an ordered list of service addresses to be used by a client node of a computing environment to reach a service of said computing environment, said creating using a predefined equation to order a plurality of service addresses having the same ordering criterion, said predefined equation balancing use of said plurality of service addresses among said client node and at least one other client node of said computing environment; and

using said ordered list by said client node to reach said service, wherein said ordered list is ordered specifically for said client node based on one or more characteristics of said client node.

2-3. (Canceled)

4. The method of claim 1, wherein said ordering criterion comprises distance from said client node to a plurality of servers corresponding to said plurality of service addresses.

5. The method of claim 1, wherein said predefined equation is based at least in part on the number of said plurality of service addresses having the same ordering criterion and a node number of said client node.

6. The method of claim 1, wherein said creating comprises ordering said service addresses based on distance from the client node to servers of said service addresses.

7. The method of claim 6, wherein said ordering based on distance comprises ordering based on lowest distance.

8. A method of providing ordered lists of service addresses, said method comprising:

creating an ordered list of service addresses to be used by a node of a computing environment to reach a service of said computing environment, said creating using a predefined equation to order a plurality of service addresses having the same ordering criterion, said predefined equation balancing use of said plurality of service addresses among said node and at least one other node of said computing environment, and said predefined equation comprising:

[((a number of said node)mod(number of said plurality of service addresses having the same ordering criterion)+k)mod(number of said plurality of service addresses having the same ordering criterion)], wherein mod is an integer remainder of a division operation, and k is set to a selected value; and

using said ordered list by said node to reach said service, wherein said ordered list is ordered specifically for said node.

9. The method of claim 8, wherein said predefined equation is computed a number of times, said number of times being equal to the number of said plurality of service addresses, and wherein k is incremented for each computation.

10. The method of claim 8, wherein said same ordering criterion comprises equidistance from said node to a plurality of servers corresponding to said plurality of service addresses.

11. The method of claim 10, wherein said creating further comprises ordering said service addresses based on distance from the node to servers of said service addresses.

12. The method of claim 1, wherein said service comprises a system registry service.

13. The method of claim 1, wherein said creating is performed by a distributed configuration manager of said computing environment.

14. The method of claim 13, wherein said distributed configuration manager provides said ordered list to one or more nodes of said computing environment.

15. The method of claim 1, further comprising maintaining said ordered list.

16. The method of claim 15, wherein said maintaining comprises updating said ordered list in response to a change in the service addresses of said list.

17. The method of claim 16, wherein said maintaining is performed by at least one distributed configuration manager of said computing environment.

18. A method of providing ordered lists of service addresses, said method comprising:

ordering a list of a plurality of service addresses according to an ordering criterion, said ordered list being ordered for a specific client node based on one or more characteristics of the client node; and

for at least one set of service addresses of said plurality of service addresses having a same value for the ordering criterion, selecting an order for the service addresses of the set, said selecting being based at least in part on workload distribution.

19. The method of claim 18, wherein said selecting comprises:

indexing the service addresses of the set in a chosen order providing a set of indices corresponding to the service addresses of the set; and

determining an order for the plurality of indices, said order to represent the order of the service addresses of the set.

20. The method of claim 19, wherein the chosen order is ascending order of service addresses.

21. The method of claim 19, wherein said determining comprises using an equation to determine the order, said equation being based at least in part on the number of said service addresses of said set and a node number of the specific client node.

22. A method of providing ordered lists of service addresses, said method comprising:

ordering a list of a plurality of service addresses according to an ordering criterion, said ordered list being ordered for a specific node; and

for at least one set of service addresses of said plurality of service addresses having a same value for the ordering criterion, selecting an order for the service addresses of the set, said selecting being based at least in part on workload distribution, and wherein said selecting comprises:

indexing the service addresses of the set in a chosen order providing a set of indices corresponding to the service addresses of the set; and

determining an order for the plurality of indices, said order to represent the order of the service addresses of the set, wherein said determining comprises using an equation to determine the order, said equation being based at least in part on the number of said service addresses of said set and a node number of the specific node, and said equation comprising:

[((node number)mod(number of said service addresses of the set)+k)mod(number of said service addresses of the set)], wherein mod is an integer remainder of a division operation, and k is set to a selected value.

23. The method of claim 18, wherein said ordering criterion is based on distance from said client node to a plurality of servers corresponding to said plurality of service addresses.

24. The method of claim 23, wherein said ordering criterion comprises a lowest distance from said client node to the plurality of servers.

25. A system of providing ordered lists of service addresses, said system comprising:

means for creating an ordered list of service addresses to be used by a client node of a computing environment to reach a service of said computing environment, said means for creating using a predefined equation to order a plurality of service addresses having the same ordering criterion, said predefined equation balancing use of said plurality of service addresses among said client node and at least one other client node of said computing environment; and

means for using said ordered list by said client node to reach said service, wherein said ordered list is ordered specifically for said client node based on one or more characteristics of the client node.

26. The system of claim 25, wherein said ordering criterion comprises distance from said client node to a plurality of servers corresponding to said plurality of service addresses.

27. The system of claim 25, wherein said predefined equation is based at least in part on the number of said plurality of service addresses having the same ordering criterion and a node number of said client node.

28. The system of claim 25, wherein said means for creating comprises means for ordering said service addresses based on distance from the client node to servers of said service addresses.

29. The system of claim 28, wherein said means for ordering based on distance comprises means for ordering based on lowest distance.

30. A system of providing ordered lists of service addresses, said system comprising:

means for creating an ordered list of service addresses to be used by a node of a computing environment to reach a service of said computing environment, said means for creating using a predefined equation to order a plurality of service addresses having the same ordering criterion, said predefined equation balancing use of said plurality of service addresses among said node and at least one other node of said computing environment, and said predefined equation comprising:

[((a number of said node)mod(number of said plurality of service addresses having the same ordering criterion)+k)mod(number of said plurality of service addresses having the same ordering criterion)], wherein mod is an integer remainder of a division operation, and k is set to a selected value; and

means for using said ordered list by said node to reach said service, wherein said ordered list is ordered specifically for said node.

31. The system of claim 30, wherein said predefined equation is computed a number of times, said number of times being equal to the number of said plurality of service addresses, and wherein k is incremented for each computation.

32. The system of claim 30, wherein said same ordering criterion comprises equidistance from said node to a plurality of servers corresponding to said plurality of service addresses.

33. The system of claim 32, wherein said means for creating further comprises means for ordering said service addresses based on distance from the node to servers of said service addresses.

34. The system of claim 25, wherein said service comprises a system registry service.

35. The system of claim 25, wherein said means for creating comprises using a distributed configuration manager of said computing environment.

36. The system of claim 35, wherein said distributed configuration manager provides said ordered list to one or more nodes of said computing environment.

37. The system of claim 25, further comprising means for maintaining said ordered list.

38. The system of claim 37, wherein said means for maintaining comprises means for updating said ordered list in response to a change in the service addresses of said list.

39. The system of claim 38, wherein said means for maintaining comprises using at least one distributed configuration manager of said computing environment.

40. A system of providing ordered lists of service addresses, said system comprising:

means for ordering a list of a plurality of service addresses according to an ordering criterion, said ordered list being ordered for a specific client node based on one or more characteristics of the client node; and

for at least one set of service addresses of said plurality of service addresses having a same value for the ordering criterion, means for selecting an order for the service addresses of the set, the selecting being based at least in part on workload distribution.

41. The system of claim 40, wherein said means for selecting comprises:

means for indexing the service addresses of the set in a chosen order providing a set of indices corresponding to the service addresses of the set; and

means for determining an order for the plurality of indices, said order to represent the order of the service addresses of the set.

42. The system of claim 41, wherein the chosen order is ascending order of service addresses.

43. The system of claim 41, wherein said means for determining comprises means for using an equation to determine the order, said equation being based at least in part on the number of said service addresses of said set and a node number of the specific client node.

44. A system of providing ordered lists of service addresses, said system comprising:

means for ordering a list of a plurality of service addresses according to an ordering criterion, said ordered list being ordered for a specific node; and

for at least one set of service addresses of said plurality of service addresses having a same value for the ordering criterion, means for selecting an order for the service addresses of the set, the selecting being based at least in part on workload distribution, and wherein said means for selecting comprises:

means for indexing the service addresses of the set in a chosen order providing a set of indices corresponding to the service addresses of the set; and

means for determining an order for the plurality of indices, said order to represent the order of the service addresses of the set, wherein said means for determining comprises means for using an equation to determine the order, said equation being based at least in part on the number of said service addresses of said set and a node number of the specific node, and said equation comprising:

[((node number)mod(number of said service addresses of the set)+k)mod(number of said service addresses of the set)], wherein mod is an integer remainder of a division operation, and k is set to a selected value.

45. The system of claim 40, wherein the ordering criterion is based on distance from said node to a plurality of servers corresponding to said plurality of service addresses.

46. The system of claim 45, wherein the ordering criterion comprises a lowest distance from said node to the plurality of servers.

47. A system of providing ordered lists of service addresses, said system comprising:

at least one node of a computing environment to create an ordered list of service addresses to be ordered specifically for and used by a client node of the computing environment to reach a service of said computing environment, the creating using a predefined equation that takes into consideration one or more characteristics of the client node to order a plurality of service addresses having the same ordering criterion, said predefined equation balancing use of said plurality of service addresses among said client node to use the ordered list and at least one other client node of said computing environment.

48. A system of providing ordered lists of service addresses, said system comprising:

at least one node to order a list of a plurality of service addresses according to an ordering criterion, said ordered list being ordered for a specific client node based on one or more characteristics of the client node; and

at least one node to select, for at least one set of service addresses of said plurality of service addresses having a same value for the ordering criterion, an order for the service addresses of the set, the selecting being based at least in part on workload distribution.

49. The system of claim 48, wherein said at least one node to order and said at least one node to select comprise the same at least one node.

50. The system of claim 48, wherein said at least one node to order is different from said at least one node to select.

51. At least one program storage device readable by a machine tangibly embodying at least one program of instructions executable by the machine to perform a method of providing ordered lists of service addresses, said method comprising:

creating an ordered list of service addresses to be used by a client node of a computing environment to reach a service of said computing environment, said creating using a predefined equation to order a plurality of service addresses having the same ordering criterion, said predefined equation balancing use of said plurality of service addresses among said client node and at least one other client node of said computing environment; and

using said ordered list by said client node to reach said service, wherein said ordered list is ordered specifically for said client node based on one or more characteristics of the client node.

52. The at least one program storage device of claim 51, wherein said ordering criterion comprises distance from said client node to a plurality of servers corresponding to said plurality of service addresses.

53. The at least one program storage device of claim 51, wherein said predefined equation is based at least in part on the number of said plurality of service addresses having the same ordering criterion and a node number of said client node.

54. The at least one program storage device of claim 51, wherein said creating comprises ordering said service addresses based on distance from the client node to servers of said service addresses.

55. The at least one program storage device of claim 54, wherein said ordering based on distance comprises ordering based on lowest distance.

56. At least one program storage device readable by a machine tangibly embodying at least one program of instructions executable by the machine to perform a method of providing ordered lists of service addresses, said method comprising:

creating an ordered list of service addresses to be used by a node of a computing environment to reach a service of said computing environment, said creating using a predefined equation to order a plurality of service addresses having the same ordering criterion, said predefined equation balancing use of said plurality of service addresses among said node and at least one other node of said computing environment, and said predefined equation comprising:

[((a number of said node)mod(number of said plurality of service addresses having the same ordering criterion)+k)mod(number of said plurality of service addresses having the same ordering criterion)], wherein mod is an integer remainder of a division operation, and k is set to a selected value; and

using said ordered list by said node to reach said service, wherein said ordered list is ordered specifically for said node.

57. The at least one program storage device of claim 56, wherein said predefined equation is computed a number of times, said number of times being equal to the number of said plurality of service addresses, and wherein k is incremented for each computation.

58. The at least one program storage device of claim 56, wherein said same ordering criterion comprises equidistance from said node to a plurality of servers corresponding to said plurality of service addresses.

59. The at least one program storage device of claim 58, wherein said creating further comprises ordering said service addresses based on distance from the node to servers of said service addresses.

60. The at least one program storage device of claim 51, wherein said service comprises a system registry service.

61. The at least one program storage device of claim 51, wherein said creating is performed by a distributed configuration manager of said computing environment.

62. The at least one program storage device of claim 61, wherein said distributed configuration manager provides said ordered list to one or more nodes of said computing environment.

63. The at least one program storage device of claim 51, wherein said method further comprises maintaining said ordered list.

64. The at least one program storage device of claim 63, wherein said maintaining comprises updating said ordered list in response to a change in the service addresses of said list.

65. The at least one program storage device of claim 64, wherein said maintaining is performed by at least one distributed configuration manager of said computing environment.

66. At least one program storage device readable by a machine tangibly embodying at least one program of instructions executable by the machine to perform a method of providing ordered lists of service addresses, said method comprising:

ordering a list of a plurality of service addresses according to an ordering criterion, said ordered list being ordered for a specific client node based on one or more characteristics of the client node; and

for at least one set of service addresses of said plurality of service addresses having a same value for the ordering criterion, selecting an order for the service addresses of the set, said selecting being based at least in part on workload distribution.

67. The at least one program storage device of claim 66, wherein said selecting comprises:

indexing the service addresses of the set in a chosen order providing a set of indices corresponding to the service addresses of the set; and

determining an order for the plurality of indices, said order to represent the order of the service addresses of the set.

68. The at least one program storage device of claim 67, wherein the chosen order is ascending order of service addresses.

69. The at least one program storage device of claim 67, wherein said determining comprises using an equation to determine the order, said equation being based at least in part on the number of said service addresses of said set and a node number of the specific client node.

70. At least one program storage device readable by a machine tangibly embodying at least one program of instructions executable by the machine to perform a method of providing ordered lists of service addresses, said method comprising:

ordering a list of a plurality of service addresses according to an ordering criterion, said ordered list being ordered for a specific node; and

for at least one set of service addresses of said plurality of service addresses having a same value for the ordering criterion, selecting an order for the service addresses of the set, said selecting being based at least in part on workload distribution, and wherein said selecting comprises:

indexing the service addresses of the set in a chosen order providing a set of indices corresponding to the service addresses of the set; and

determining an order for the plurality of indices, said order to represent the order of the service addresses of the set, wherein said determining comprises using an equation to determine the order, said equation being based at least in part on the number of said service addresses of said set and a node number of the specific node, and said equation comprising:

[((node number)mod(number of said service addresses of the set)+k)mod(number of said service addresses of the set)], wherein mod is an integer remainder of a division operation, and k is set to a selected value.

71. The at least one program storage device of claim 66, wherein said ordering criterion is based on distance from said node to a plurality of servers corresponding to said plurality of service addresses.

72. The at least one program storage device of claim 71, wherein said ordering criterion comprises a lowest distance from said node to the plurality of servers.

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